



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW1431GA-JM BYPASS RATIO: 11.9  
 UNIQUE ID NUMBER: 01P22PW180 PRESSURE RATIO ( $\pi_{00}$ ): 35.6  
 COMBUSTOR: TALON X, Block-D  
 ENGINE TYPE: TF RATED THRUST ( $F_{00}$ ) (kN): 140.4

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	0.7	29.4	38.0	10.9
AS % OF ORIGINAL LIMIT	3.7	24.9	34.2	50.4
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			42.7	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			48.6	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			54.1	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			62.0	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.950	0.07	0.24	25.89	8.4
CLIMB OUT	85	2.2	0.780	0.07	0.28	20.23	6.7
APPROACH	30	4.0	0.270	0.06	3.33	10.75	0.3
IDLE	7	26.0	0.090	0.37	22.13	5.62	0.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			348	66	3361	4601	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				4	4	4	4
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				0.5	23.9	32.8	8.4
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.5-102.2
TEMPERATURE (K)	279.6-300.8
ABS HUMIDITY (kg/kg)	0.00358-0.01201

### FUEL

SPEC	Jet A
H/C	1.91-1.93
AROM (%)	16.3-16.8

MANUFACTURER: Pratt & Whitney  
 TEST ORGANIZATION: Pratt & Whitney  
 TEST LOCATION: W. Palm Beach, FL  
 TEST DATES: 18/01/2020-21/01/2020

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

- Data from certification report PWA-12091
- 1 engine tested
- TALON-X, Block-D combustor
- Certification in accordance with ICAO Annex 16 Vol. II. 4th Edition, Part III, Chapter 2.

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)